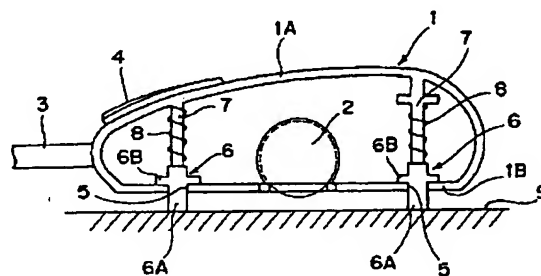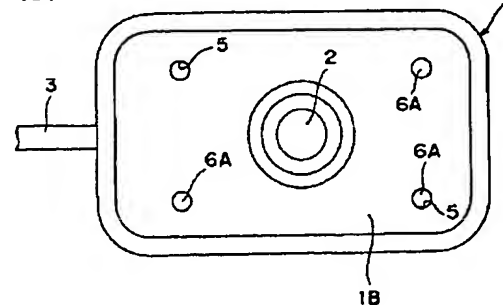⑤

(54)【考案の名称】　マウス

(57)【要約】

【目的】　移動操作領域が限られているマウスにおいて、領域限界まで移動したあとでもマウスを持ち上げたりすることなく、操作者が自在に平板上所望の位置に戻して引続きカーソル移動を継続可能なようにした使い勝手の良いマウスの提供。

【構成】　マウス筐体下面1Bにボール2を平板9との接触状態から解除可能な筐体押上手段6，7，8を配設し、この手段によりボール2を平板9から非接触状態に保ったまま、平板9上を移動可能としたマウス1。

(A)

(B)

【実用新案登録請求の範囲】

【請求項1】　表示手段に表示されるカーソルの移動信号が発生可能であり、平板上に接触して前記カーソルの移動方向に転動自在なボールを筐体下面に具えたマウスにおいて、

前記ボールを前記平板への接触状態から解除可能な筐体押上手段を前記筐体下面に関連して配設し、

該筐体押上手段により前記ボールを非接触状態に保ちつつ前記平板上を移動可能としたことを特徴とするマウス。

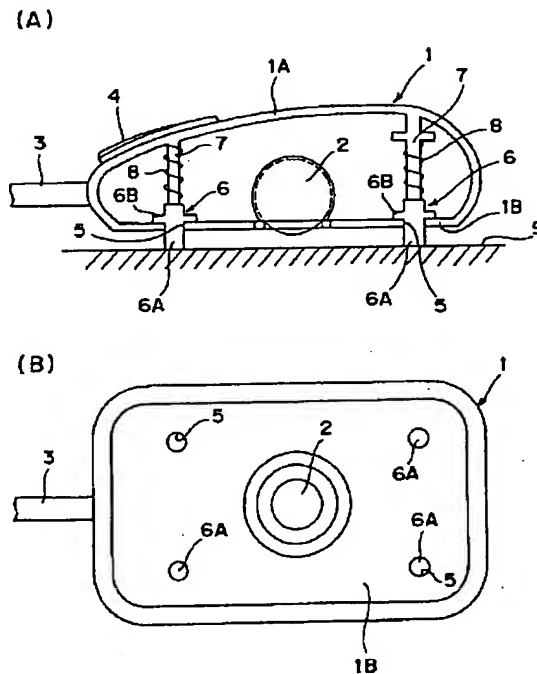【図面の簡単な説明】

【図1】本考案マウスの構成の一例を断面図（A）および下面図（B）として示す説明図である。

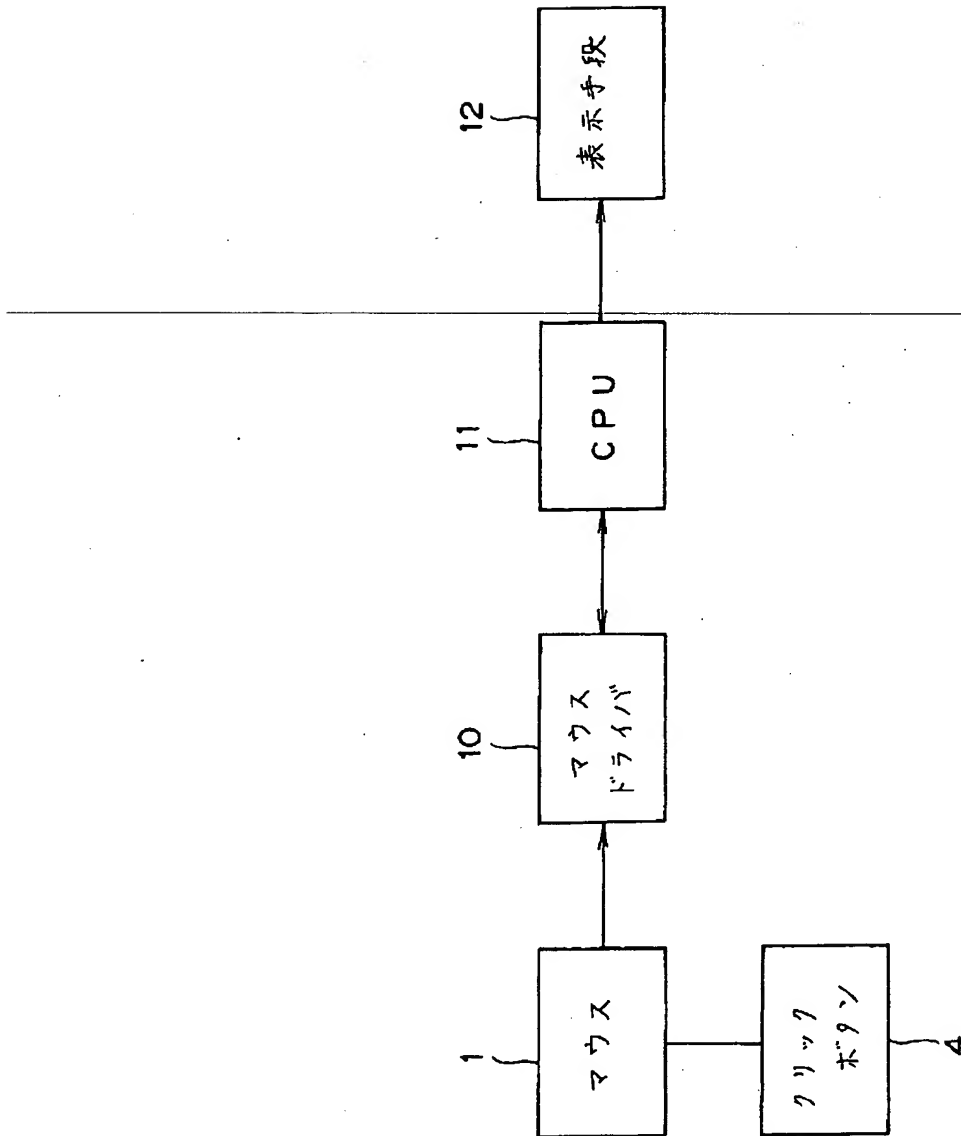【図2】本考案の適用が可能なマウスの回路構成を示すブロック図である。

【図3】マウスにおける割り込み動作の手順を示す流れ図である。

【符号の説明】

1　　マウス
1A　筐体
1B　筐体下面
2　　球体（ボール）
3　　信号線
4　　クリックボタン
6　　脚部材
6A　先端部
8　　ばね
9　　平板
11　CPU
12　表示手段

【図1】

(A)

(B)
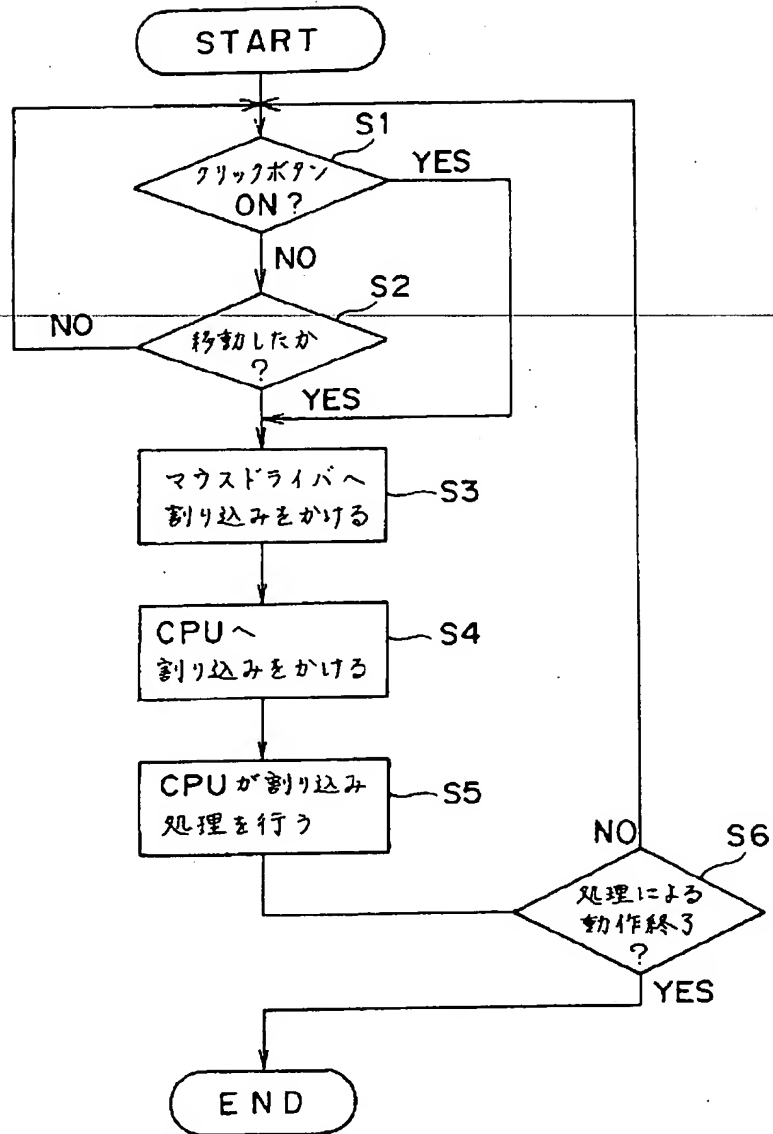
【図2】

【図3】

```
                    ┌─────────────┐
                    │    START     │
                    └──────┬──────┘
        ┌──────────────────┼──────────────────────┐
        │                  │                       │
        │              ╱───┴───╲    S1             │
        │            ╱ クリックボタン ╲  YES          │
        │           ╲   ON ？    ╱──────────┐      │
        │            ╲───┬───╱              │      │
        │               │NO                 │      │
        │          ╱────┴────╲  S2          │      │
        │  NO    ╱  移動したか  ╲            │      │
        ├───────╲      ？      ╱            │      │
        │        ╲────┬────╱                │      │
        │            │YES ◄────────────────┘      │
        │      ┌─────┴──────┐                      │
        │      │ マウスドライバへ │  S3                  │
        │      │ 割り込みをかける │                      │
        │      └─────┬──────┘                      │
        │      ┌─────┴──────┐                      │
        │      │ CPUへ       │  S4                  │
        │      │ 割り込みをかける │                      │
        │      └─────┬──────┘                      │
        │      ┌─────┴──────┐                      │
        │      │ CPUが割り込み  │  S5                  │
        │      │ 処理を行う    │                      │
        │      └─────┬──────┘        NO    S6      │
        │            │            ╱────┴────╲      │
        │            └──────────╱  処理による  ╲────┘
        │                       ╲  動作終了    ╱
        │                        ╲    ？     ╱
        │                         ╲───┬───╱
        │                            │YES
        │                    ┌───────┴──────┐
        │                    │     END      │
        │                    └──────────────┘
```

【考案の詳細な説明】

【０００１】

【産業上の利用分野】

　本考案は、マウスに関し、詳しくは、手を添えて平板上を移動させることにより平板に接触する球体を転動させ、球体の転動に対応して表示手段上のカーソルの移動が可能なマウスに関する。

【０００２】

【従来の技術】

　従来、この種のマウスではその下面側から突出させた球体の一部を平板上に接触させた状態に保持し、マウスを平板に沿って任意の方向に移動させたときに得られるｘおよびｙ軸方向の変位量をホスト側の中央演算処理装置（ＣＰＵ）を介して表示手段上にカーソルの移動量として表示させる入力手段として用いられてきた。

【０００３】

【考案が解決しようとする課題】

　しかしながら、上記従来例のように使用されるマウスでは、その使用される平板上の領域が限られてしまうという欠点がある。すなわち、表示手段上のカーソルの移動についてマウスに沿えた手の伸縮範囲以上にマウスを移動させる必要が生じたときは、一旦マウスを持ち上げたまま、カーソルの移動方向とは逆の方向にこれを戻して接板させた上、再度カーソルを移動させる方向に合わせて動作させる必要があり、操作者にとって使い勝手が悪い。

【０００４】

　本考案の目的は、上述したような従来の欠点を無くし、マウスを持ち上げたりすることなく、操作者が自在に平板上所望の位置に引き戻して、引続きのカーソル移動が可能なようにした使い勝手の良いマウスを提供することにある。

【０００５】

【課題を解決するための手段】

　かかる目的を達成するために、本考案は、表示手段に表示されるカーソルの移動信号が発生可能であり、平板上に接触して前記カーソルの移動方向に転動自在

なボールを筐体下面に具えたマウスにおいて、前記ボールを前記平板への接触状態から解除可能な筐体押上手段を前記筐体下面に関連して配設し、該筐体押上手段により前記ボールを非接触状態に保ちつつ前記平板上を移動可能としたことを特徴とするものである。

【０００６】

【作用】

本考案によれば、筐体押上手段によりボールを平板から非接触状態に保ったままマウスを平板上で移動させることができるので、その間はカーソル移動信号が出力されることもなく、その任意の位置への移動後、筐体押上手段による非接触状態を解除することによって再び表示手段上のカーソル移動を継続させることができる。

【０００７】

【実施例】

以下に、図面を参照しつつ本考案の実施例を具体的に説明する。

【０００８】

図１は本考案の一実施例を示すもので、その（Ａ）は断面図、その（Ｂ）は下面図である。ここで、１はそのマウス本体、１Ａはマウス１の人手によって把持される上部筐体、１Ｂは筐体下面であり、２は筐体下面１Ｂのほぼ中央部から下方に球面の一部が突出した状態に保持される球体（ボール）である。かくして、筐体１Ａを把持したまま人手の移動によって、筐体下面１Ｂに保持されたボール２がその移動方向に自在に転動されることにより、不図示の検知手段によりその移動方向および移動距離が刻々と検知されて、信号線３によりその検知信号が取出されるように構成されている。

【０００９】

４はマウス１を把持する操作者によって押下されるクリックボタンであり、クリックボタン４の操作によって、例えば表示手段上からアイコンやメニューを選択することができる。また、本実施例では筐体下面１Ｂの４箇所に孔５が設けられていて、これらの孔５から鍔付き脚部材６の先端部６Ａが下方に向けて突出された状態に保持される。７はこれら脚部材６の案内軸、８は案内軸７の周りに保

持され、脚部材６の鍔部６Ｂを筐体下面１Ｂの内側に向けて偏倚させているばね
である。なおここで、各脚部材６の先端部６Ａはそれぞれボール２より十分大き
く、かつ均等に下方に突出されており、筐体１Ａを把持する人手の押下力を弱め
ると、ばね８のばね力が勝って脚部材先端部６Ａが（Ａ）に示すように突出しボ
ール２を平板９上から浮き上らせることができる。

【０○１０】

ついで、図２に従ってマウス１の機能的動作にかかわる回路構成について説明
しておく。ここで、１０はマウス１の動作を監視して、これをＣＰＵ１１に伝達
すると共に、クリックボタン４を介して入力された信号に応じて、ＣＰＵ１１と
の間で割り込みに対処した動作に協働するマウスドライバ、１２はマウス１の移
動に応じてＣＰＵ１１から出される信号により移動するカーソルを具えた表示手
段である。

【００１１】

図３は図２に示した回路構成によるマウス１の一般的な動作手順を示す。マウ
ス１が駆動可能な状態に置かれたところで、まずステップＳ１において、クリッ
クボタン４が押下されたか否かが判断され、クリックボタン４が操作されたとの
判断の場合はステップＳ３に進み、その選択されたメニュー等に従った動作を行
うためにマウスドライバ１０に、さらにまたステップＳ４でＣＰＵ１１に割り込
みがかけられる。かくしてステップＳ５でＣＰＵ１１によって割り込み処理が行
われるもので、この割り込み動作により、クリックボタン４押下前の状態が保持
されたまま、新たに選択された動作が進められる。

【００１２】

また、ステップＳ１で否定の判断の場合は、さらにステップＳ２でマウス１に
よる移動が行われたか否か判断し、その移動があれば、ステップＳ３に進み、移
動ごとに同様にしてステップＳ３〜Ｓ５の手順によって割り込み処理が行われる
と共にその処理に従って表示手段１２上のカーソル移動（不図示）が行われる。
かくして、ステップＳ６でマウス１による一連の機能的動作が終了したか否かを
判断し、終了していないとの判断の場合はステップＳ１に戻る。

【００１３】

　そこで、本実施例においては、マウス1の筐体1Aに手を添えて、幾分下方に押付け気味に保つことでばね8を圧縮して脚部材6を筐体内に後退させることができ、この状態でボール2の突出面を平板9に接触させた状態に保つことができる。よって、そのまま、マウス1を平板9上に沿わせて、カーソルの移動させたい方向に合わせてマウス1を移動させることによりボール2を転動させ、その移動方向および距離に対応して表示手段12上のカーソルを移動させることができる。また、マウス1が移動領域の限界にまで移動されたならば、マウス1を把持している手の押付けを弱めるだけで、ボール2を脚部材6に設けたばね8の作用で平板上から浮かせると共に、ボール2の転動中止により割り込み動作として、そのままの状態をCPU11を介して内部メモリに保存させることができる。

【0014】

　よって、マウス1を戻した上、再びこれを押付け気味に保って移動を継続することによりカーソルを再び移動させるようにすればよい。

【0015】

　なお、以上に述べた実施例では、脚部材6の先端部6Aをそのまま筐体下面1Bから突出させるようにしたが、移動し易くするために、先端部6Aの平板9と接する部分に丸みを持たせて半球状に形成してもよい。あるいはボールを先端部6Aに転動自在に埋め込むなり、そのボール自体に弾性を持たせるようにしてもよい。また、先端部6Aが後退してボール2の接地状態が得られるようになったことを操作者に知らせるために、筐体1Aの見易いところに点灯手段を設けるなり、あるいは表示手段12に、その状態を表示するマークを出力させるように構成することも可能である。

【0016】

【考案の効果】

　以上説明してきたように、本考案によれば、ボールを前記平板への接触状態から解除可能な筐体押上手段を前記筐体下面に関連して配設し、該筐体押上手段により前記ボールを非接触状態に保ちつつ前記平板上を移動可能としたので、ボールを転動させることなく、マウスを平板上で自在に移動させることが可能となり、従って、マウスが人手による移動可能な領域からはみ出しそうになった場合は

把持している力を弱めて、マウスを軽く保持するようにするだけで、あとの移動中割り込みモードに保つことができ、あらためて任意の位置からボールを回転させ、引続き表示手段上のカーソルの移動を継続することができる。

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CLAIMS

[Utility model registration claim]
[Claim 1] The mouse characterized by to make said monotonous top movable, having arranged a case Oshiage means to by_which said ball can cancel of the contact condition to said plate, in relation to said case inferior surface of tongue, and this case Oshiage means maintaining said ball at a non-contact condition in the mouse which could generate the migration signal of the cursor displayed on a display means, contacted on monotonous, and equipped a case inferior surface of tongue with the ball which can roll freely in the migration direction of said cursor.

[Translation done.]

DETAILED DESCRIPTION

[Detailed explanation of a design]
[0001]
[Industrial Application]
By attaching a hand and moving a monotonous top in detail, about a mouse, this design rolls the solid sphere in contact with a plate, and is related with the mouse which can move the cursor on a display means corresponding to spherical rolling motion.
[0002]
[Description of the Prior Art]
With the former and this kind of mouse, it held in the condition of having contact on monotonous the spherical part made project from that inferior surface of tongue side, and has be use as an input means to display the amount of displacement of x obtain when it meets monotonously and a mouse is move in the direction of arbitration, and the direction of the y-axis as movement magnitude of cursor on a display means through the arithmetic and program control (CPU) by the side of a host.
[0003]
[Problem(s) to be Solved by the Device]
However, with the mouse used like the above-mentioned conventional example, there is a fault that the field when [monotonous] used will be restricted. that is, meet a mouse about migration of the cursor on a display means -- it is necessary to make it operate according to the direction to which cursor is moved again, after making this return and **** in the direction contrary to the migration direction of cursor, once lifting a mouse, when it is necessary to move a mouse more than the flexible range of ****, and user-unfriendly for an operator.
[0004]
The purpose of this design is to offer a mouse with the sufficient user-friendliness carried out as [be / the cursor advance by which an operator pulls back and follows the location of a monotonous upper request free / possible], without abolishing the conventional fault which was mentioned above and lifting a mouse.
[0005]
[Means for Solving the Problem]
In the mouse which this design could generate the migration signal of the cursor displayed on a display means, contacted on monotonous, and equipped the case inferior surface of tongue with the ball which can roll freely in the migration direction of said cursor in order to attain this purpose It is characterized by making said monotonous top movable, arranging a case Oshiage means by which said ball can be canceled of the contact condition to said plate, in relation to said case inferior surface of tongue, and this case Oshiage means maintaining said ball at a non-contact condition.
[0006]
[Function]
The cursor advance on a display means can be made to continue again by canceling the non-contact condition by the case Oshiage means, after moving to the location of the arbitration, without outputting a cursor advance signal in the meantime, since according to this design a mouse can be moved on monotonous while the case Oshiage means had maintained the ball at the non-contact condition from the plate.
[0007]

[Example]
The example of this design is concretely explained to it, referring to a drawing to below.
[0008]
Drawing 1 shows one example of this design, the (A) is a sectional view and the (B) is a bottom view. The up case with which the mouse body and 1A are grasped for 1 by the help of a mouse 1, and 1B are case inferior surfaces of tongue here, and 2 is a solid sphere (ball) mostly held from a center section at the condition of case inferior-surface-of-tongue 1B that a part of spherical surface projected caudad. When the ball 2 held at case inferior-surface-of-tongue 1B rolls free in the migration direction by migration of a help in this way, with case 1A grasped, the migration direction and migration length are detected every moment by detection means by which it does not illustrate, and it is constituted so that the detection signal may be taken out with a signal line 3.
[0009]
4 is a click carbon button pushed by the operator who grasps a mouse 1, and can choose an icon and a menu for example, from on a display means by actuation of the click carbon button 4. moreover, in this example, a hole 5 prepares in four places of case inferior-surface-of-tongue 1B -- having -- **** -- the collar from these holes 5 -- it is held at the condition that turned caudad, and point 6A of the with leg material 6 projected, and was carried out. It is the spring which 7 is held at the guidance shaft of these leg material 6, and 8 is held [spring] around the guidance shaft 7, and is turning and deflecting flange 6B of the leg material 6 inside case inferior-surface-of-tongue 1B. In addition, point 6A of each leg material 6 is projected sufficiently greatly and equal caudad from the ball 2, respectively, and if the depression force of the help who grasps case 1A is weakened, leg material point 6A can float the projection ball 2 from on a plate 9 here, as the spring force of a spring 8 wins and it is shown in (A).
[0010]
Subsequently, according to drawing 2 , the circuitry in connection with functional actuation of a mouse 1 is explained. While 10 supervises actuation of a mouse 1 and transmitting this to CPU11 here, the mouse driver which collaborates in the actuation which coped with interruption between CPUs11 according to the signal inputted through the click carbon button 4, and 12 are the display means equipped with the cursor which moves with the signal taken out from CPU11 according to migration of a mouse 1.
[0011]
Drawing 3 shows the general operations sequence of the mouse 1 by the circuitry shown in drawing 2 . When it is decision that it was judged whether the click carbon button 4 was first pushed in step S1 in the place kept in the condition that a mouse 1 can be driven and the click carbon button 4 was operated, it progresses to step S3, and in order to perform actuation according to the selected menu etc., interruption is applied to CPU11 by step S4 further again at the mouse driver 10. While interruption processing is performed by CPU11 at step S5 in this way and the condition in front of click carbon button 4 depression had been held by this interruption actuation, newly chosen actuation is advanced.
[0012]
Moreover, if it judges further whether migration by the mouse 1 was performed at step S2 in decision of negation at step S1 and it has the migration, it progresses to step S3, and while interruption processing is similarly performed by the procedure of steps S3-S5 for every migration, according to the processing, the cursor advance on the display means 12 (un-illustrating) will be performed.
As for the case of decision, if it judges whether a series of functional actuation by the mouse 1 was completed and has not ended at step S6 in this way returns to step S1.
[0013]
Then, in this example, a hand is attached to case 1A of a mouse 1, a spring 8 can be compressed by pushing a little caudad and maintaining at feeling, the leg material 6 can be retreated in a case, and it can maintain at the condition of having contacted the protrusion side of a ball 2 on the plate 9 in this condition. Therefore, as it is, a mouse 1 is made to meet on a plate 9, by moving a mouse 1 according to a direction [cursor] making it move, a ball 2 can be rolled and the cursor on the display means 12 can be moved corresponding to the migration direction and distance.
Moreover, while floating from monotonous in an operation of the spring 8 which formed the ball 2 in the leg material 6, a condition as it is can be made to save through CPU11 as interruption actuation at an internal memory only by weakening forcing of the hand which is grasping the mouse 1 by the rolling termination of a ball 2, if a mouse 1 is moved even to the limitation of a migration field.

[0014]
Therefore, what is necessary is making it just move cursor again by forcing this again, maintaining at feeling, after returning a mouse 1, and continuing migration.
[0015]
In addition, in the example described above, although it was made to make point 6A of the leg material 6 project from case inferior-surface-of-tongue 1B as it is, in order to make it easy to move, a radius of circle may be given to the part which touches the plate 9 of point 6A, and you may form in the shape of a semi-sphere. Or as soon as it embeds a ball free [rolling] at point 6A, you may make it give elasticity to the ball itself. Moreover, in order to tell an operator about point 6A retreating and the touch-down condition of a ball 2 having come to be acquired, as soon as it forms a lighting means in the legible place of case 1A, it is also possible to constitute so that the mark which displays the condition on the display means 12 may be made to output.
[0016]
[Effect of the Device]
As explained above, according to this design, a case Oshiage means by which a ball can be canceled of the contact condition to said plate is arranged in relation to said case inferior surface of tongue. Since said monotonous top was made movable, this case Oshiage means maintaining said ball at a non-contact condition It becomes possible [without rolling a ball] to move a mouse free on monotonous. Therefore, weaken the force currently grasped, when a mouse becomes that the movable field by the help is likely to be overflowed, and a mouse is only held lightly. It can maintain at interruption mode during next migration, a ball can be anew rotated from the location of arbitration, and migration of the cursor on a display means can be continued succeedingly.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application]
By attaching a hand and moving a monotonous top in detail, about a mouse, this design rolls the solid sphere in contact with a plate, and is related with the mouse which can move the cursor on a display means corresponding to spherical rolling motion.
[0002]

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PRIOR ART

[Description of the Prior Art]
With the former and this kind of mouse, it held in the condition of having contact on monotonous the spherical part made project from that inferior surface of tongue side, and has be use as an input means to display the amount of displacement of x obtain when it meets monotonously and a mouse is move in the direction of arbitration, and the direction of the y-axis as movement magnitude of cursor on a display means through the arithmetic and program control (CPU) by the side of a host.
[0003]

[Translation done.]

* NOTICES *

EFFECT OF THE INVENTION

[Effect of the Device]
As explained above, according to this design, a case Oshiage means by which a ball can be canceled of the contact condition to said plate is arranged in relation to said case inferior surface of tongue. Since said monotonous top was made movable, this case Oshiage means maintaining said ball at a non-contact condition It becomes possible [without rolling a ball] to move a mouse free on monotonous. Therefore, weaken the force currently grasped, when a mouse becomes that the movable field by the help is likely to be overflowed, and a mouse is only held lightly. It can maintain at interruption mode during next migration, a ball can be anew rotated from the location of arbitration, and migration of the cursor on a display means can be continued succeedingly.

[Translation done.]

* NOTICES *

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Device]
However, with the mouse used like the above-mentioned conventional example, there is a fault that the field when [monotonous] used will be restricted. that is, meet a mouse about migration of the cursor on a display means -- it is necessary to make it operate according to the direction to which cursor is moved again, after making this return and **** in the direction contrary to the migration direction of cursor, once lifting a mouse, when it is necessary to move a mouse more than the flexible range of ****, and user-unfriendly for an operator.
[0004]
The purpose of this design is to offer a mouse with the sufficient user-friendliness carried out as [be / the cursor advance by which an operator pulls back and follows the location of a monotonous upper request free / possible], without abolishing the conventional fault which was mentioned above and lifting a mouse.
[0005]

[Translation done.]

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MEANS

[Means for Solving the Problem]
In the mouse which this design could generate the migration signal of the cursor displayed on a display means, contacted on monotonous, and equipped the case inferior surface of tongue with the ball which can roll freely in the migration direction of said cursor in order to attain this purpose It is characterized by making said monotonous top movable, arranging a case Oshiage means by which said ball can be canceled of the contact condition to said plate, in relation to said case inferior surface of tongue, and this case Oshiage means maintaining said ball at a non-contact condition.
[0006]

[Translation done.]

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OPERATION

[Function]
The cursor advance on a display means can be made to continue again by canceling the non-contact condition by the case Oshiage means, after moving to the location of the arbitration, without outputting a cursor advance signal in the meantime, since according to this design a mouse can be moved on monotonous while the case Oshiage means had maintained the ball at the non-contact condition from the plate.
[0007]

[Translation done.]

* NOTICES *

EXAMPLE

[Example]
The example of this design is concretely explained to it, referring to a drawing to below.
[0008]
Drawing 1 shows one example of this design, the (A) is a sectional view and the (B) is a bottom view. The up case with which the mouse body and 1A are grasped for 1 by the help of a mouse 1, and 1B are case inferior surfaces of tongue here, and 2 is a solid sphere (ball) mostly held from a center section at the condition of case inferior-surface-of-tongue 1B that a part of spherical surface projected caudad. When the ball 2 held at case inferior-surface-of-tongue 1B rolls free in the migration direction by migration of a help in this way, with case 1A grasped, the migration direction and migration length are detected every moment by detection means by which it does not illustrate, and it is constituted so that the detection signal may be taken out with a signal line 3.
[0009]
4 is a click carbon button pushed by the operator who grasps a mouse 1, and can choose an icon and a menu for example, from on a display means by actuation of the click carbon button 4. moreover, in this example, a hole 5 prepares in four places of case inferior-surface-of-tongue 1B -- having -- **** -- the collar from these holes 5 -- it is held at the condition that turned caudad, and point 6A of the with leg material 6 projected, and was carried out. It is the spring which 7 is held at the guidance shaft of these leg material 6, and 8 is held [spring] around the guidance shaft 7, and is turning and deflecting flange 6B of the leg material 6 inside case inferior-surface-of-tongue 1B. In addition, point 6A of each leg material 6 is projected sufficiently greatly and equal caudad from the ball 2, respectively, and if the depression force of the help who grasps case 1A is weakened, leg material point 6A can float the projection ball 2 from on a plate 9 here, as the spring force of a spring 8 wins and it is shown in (A).
[0010]
Subsequently, according to drawing 2 , the circuitry in connection with functional actuation of a mouse 1 is explained. While 10 supervises actuation of a mouse 1 and transmitting this to CPU11 here, the mouse driver which collaborates in the actuation which coped with interruption between CPUs11 according to the signal inputted through the click carbon button 4, and 12 are the display means equipped with the cursor which moves with the signal taken out from CPU11 according to migration of a mouse 1.
[0011]
Drawing 3 shows the general operations sequence of the mouse 1 by the circuitry shown in drawing 2 . When it is decision that it was judged whether the click carbon button 4 was first pushed in step S1 in the place kept in the condition that a mouse 1 can be driven and the click carbon button 4 was operated, it progresses to step S3, and in order to perform actuation according to the selected menu etc., interruption is applied to CPU11 by step S4 further again at the mouse driver 10. While interruption processing is performed by CPU11 at step S5 in this way and the condition in front of click carbon button 4 depression had been held by this interruption actuation, newly chosen actuation is advanced.
[0012]
Moreover, if it judges further whether migration by the mouse 1 was performed at step S2 in decision of negation at step S1 and it has the migration, it progresses to step S3, and while interruption processing is similarly performed by the procedure of steps S3-S5 for every migration, according to the processing, the cursor advance on the display means 12 (un-illustrating) will be performed.

As for the case of decision, if it judges whether a series of functional actuation by the mouse 1 was completed and has not ended at step S6 in this way returns to step S1.
[0013]
Then, in this example, a hand is attached to case 1A of a mouse 1, a spring 8 can be compressed by pushing a little caudad and maintaining at feeling, the leg material 6 can be retreated in a case, and it can maintain at the condition of having contacted the protrusion side of a ball 2 on the plate 9 in this condition. Therefore, as it is, a mouse 1 is made to meet on a plate 9, by moving a mouse 1 according to a direction [cursor] making it move, a ball 2 can be rolled and the cursor on the display means 12 can be moved corresponding to the migration direction and distance.
Moreover, while floating from monotonous in an operation of the spring 8 which formed the ball 2 in the leg material 6, a condition as it is can be made to save through CPU11 as interruption actuation at an internal memory only by weakening forcing of the hand which is grasping the mouse 1 by the rolling termination of a ball 2, if a mouse 1 is moved even to the limitation of a migration field.
[0014]
Therefore, what is necessary is making it just move cursor again by forcing this again, maintaining at feeling, after returning a mouse 1, and continuing migration.
[0015]
In addition, in the example described above, although it was made to make point 6A of the leg material 6 project from case inferior-surface-of-tongue 1B as it is, in order to make it easy to move, a radius of circle may be given to the part which touches the plate 9 of point 6A, and you may form in the shape of a semi-sphere. Or as soon as it embeds a ball free [rolling] at point 6A, you may make it give elasticity to the ball itself. Moreover, in order to tell an operator about point 6A retreating and the touch-down condition of a ball 2 having come to be acquired, as soon as it forms a lighting means in the legible place of case 1A, it is also possible to constitute so that the mark which displays the condition on the display means 12 may be made to output.
[0016]

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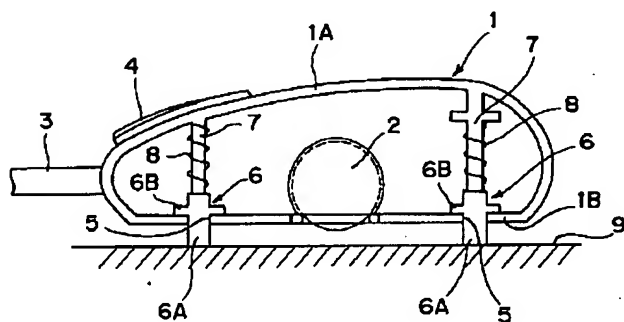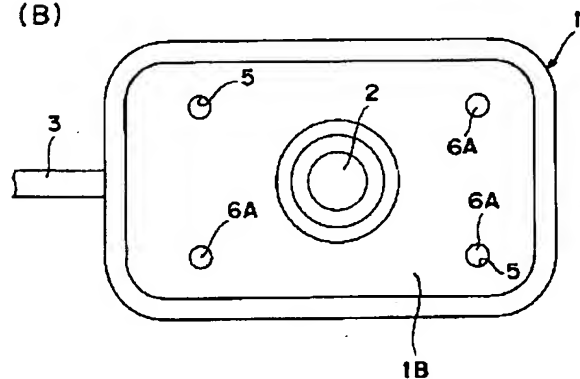3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the explanatory view showing an example of the configuration of this mouse as a sectional view (A) and a bottom view (B).
[Drawing 2] It is the block diagram showing the circuitry of the mouse which can apply this design.
[Drawing 3] It is the flow chart showing the procedure of the interruption actuation in a mouse.
[Description of Notations]
1 Mouse
1A Case
1B Case inferior surface of tongue
2 Solid Sphere (Ball)
3 Signal Line
4 Click Carbon Button
6 Leg Material
6A Point
8 Spring
9 Plate
11 CPU
12 Display Means

[Translation done.]

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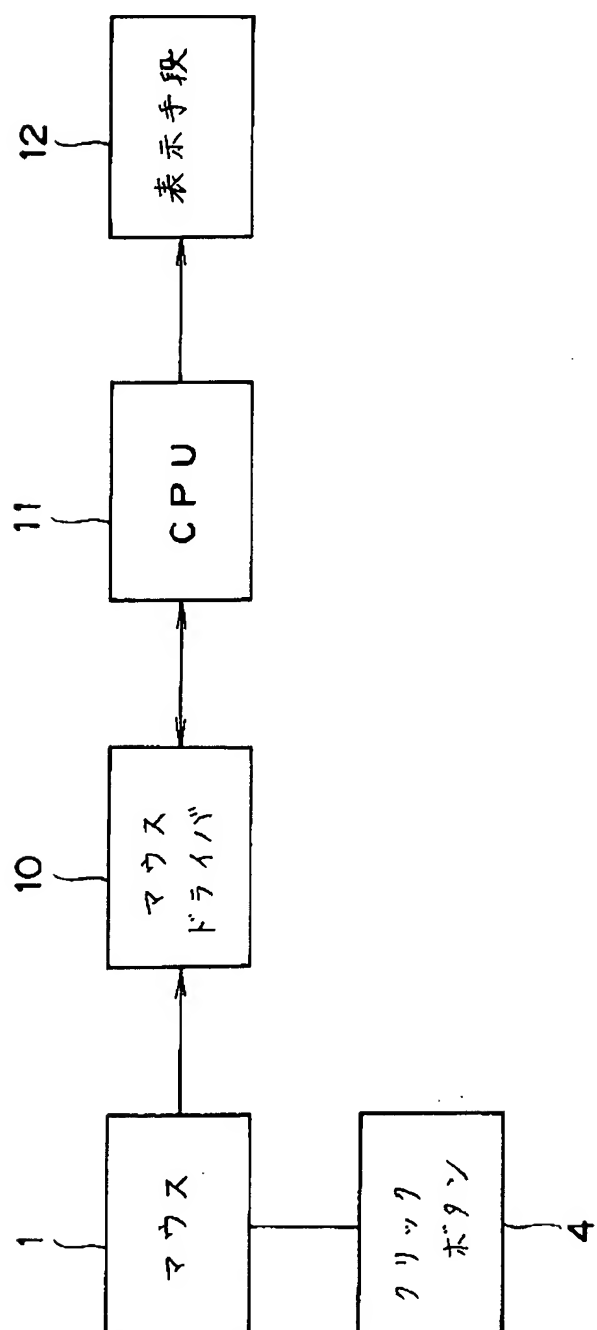3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]
(A)

(B)
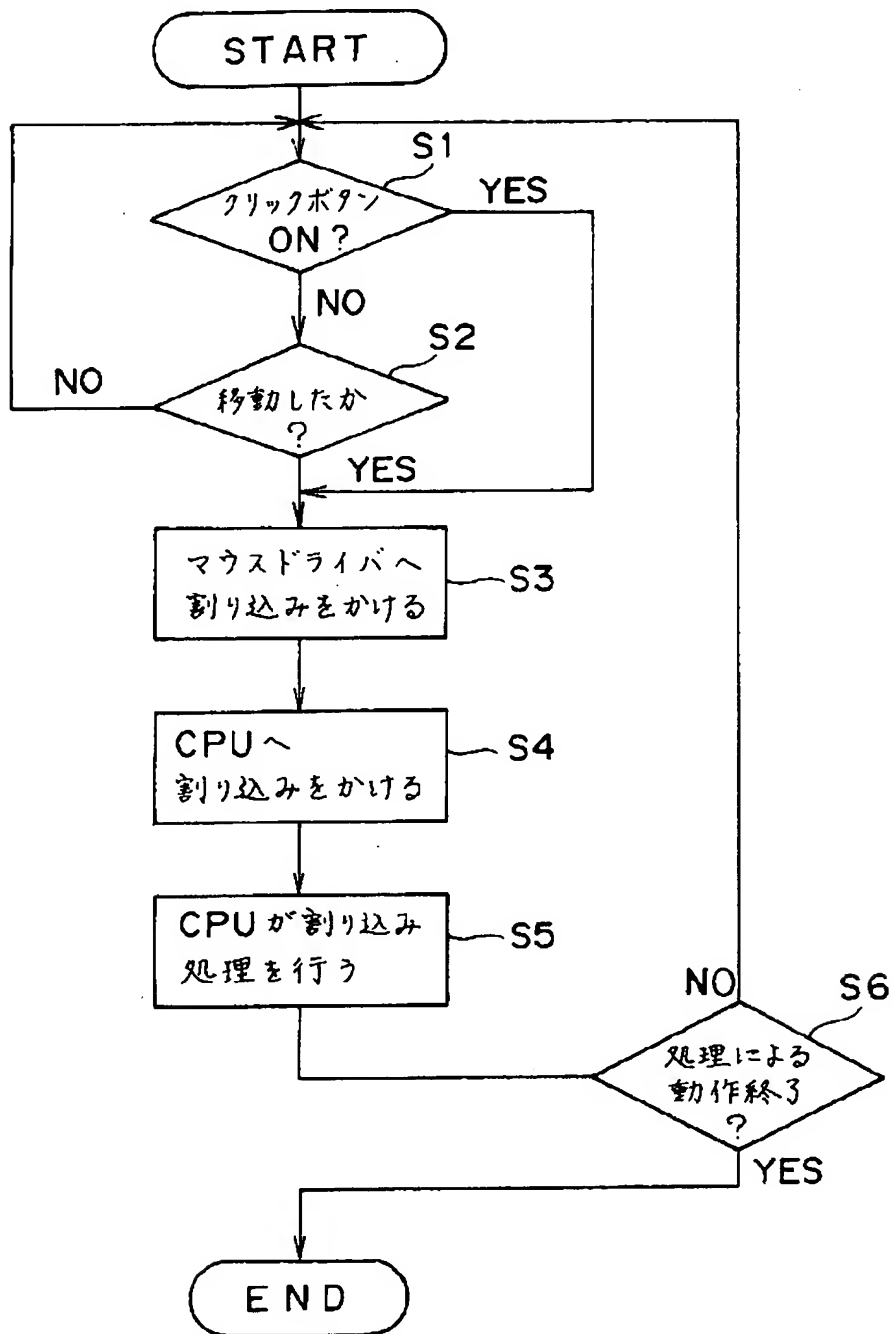

[Drawing 2]

[Drawing 3]

12	表示手段

| 11 | CPU |

| 10 | マウス
ドライバ |

| 1 | マウス |

| 4 | クリック
ボタン |

START

S1
クリックボタン
ON ? — YES

NO

S2
移動したか ? — YES

NO

マウスドライバへ
割り込みをかける — S3

CPUへ
割り込みをかける — S4

CPUが割り込み
処理を行う — S5

NO

S6
処理による
動作終了 ? — YES

END

[Translation done.]